OBJECTION AND REJECTION UNDER 35 U.S.C. §112, FIRST PARAGRAPH

Claims 1, 2, 9, 11-13, 15, 18, 21-24 and 26 stand rejected, and the specification objected to, under 35 U.S.C. §112, first paragraph. In view of applicants' comments above as to the pending claims, clarification as to the claims rejected is respectfully requested.

The Examiner has maintained the rejection on the basis that the rejected claims encompass autoimmune diseases beyond those for which specific clinical results have been submitted. The Examiner states that there are numerous autoimmune diseases having different etiologies and symptoms and questions whether the results submitted thus far with respect to specific diseases support the present claims.

Applicants enclose herewith the Third Declaration of Dr. Howard Weiner establishing that the present claims are supported with respect to treatment of "T-cell mediated autoimmune diseases" as claimed, and that the present specification and evidence submitted thus far sufficiently demonstrate patentability under 35 U.S.C. §112.

Dr. Weiner states that an immunologist in this field would have understood, based on the present specification, that the method of orally administering autoantigens is not limited to treatment of EAE or multiple sclerosis, but is generally applicable to T-cell mediated autoimmune disease treatment. (Weiner Declaration ¶5)

He explains that T-cell mediated autoimmune diseases involve common pathways of immune cell activation. Because of these common pathways, it is conventional that immunosuppressive treatments are useful in treating T-cell mediated autoimmune diseases as a class, despite the fact that etiologies differ for the diseases. Such immunosuppressive treatments

act on cells involved with the immune responses that cause T-cell mediated autoimmune diseases, irrespective of the etiologies of the diseases. (Weiner Declaration ¶6) Dr. Weiner points to several well-known examples of such treatments.

For example, Dr. Weiner states that the immunosuppressive treatment cyclosporin has been used to treat T-cell mediated autoimmune diseases having differing etiologies, such as autoimmune uveitis, psoriasis, rheumatoid arthritis, and Crohns disease. He states that it has also been used in clinical trials to treat the T-cell mediated autoimmune disease type I diabetes and has also been shown to be effective in the treatment of myasthenia gravis. (Weiner Declaration ¶8)

He also points to the immunosuppressive agent cyclophosphamide, which has been found to be useful in treating T-cell mediated diseases such as systemic lupus erythematosus, Wegener's granulomatosis, and rheumatoid arthritis and multiple sclerosis. It can also, according to Dr. Weiner, be used to treat myasthenia gravis. (Weiner Declaration ¶9)

Dr. Weiner notes that the immunosuppressive agent methotrexate has been used in the treatment of T-cell mediated autoimmune diseases such as multiple sclerosis, rheumatoid arthritis, psoriasis, and Wegener's granulomatosis (Weiner Declaration ¶10), and that the immunosuppressive agent azathioprine has been used to treat autoimmune diseases such as rheumatoid arthritis and multiple sclerosis, as well as myasthenia gravis (Weiner Declaration ¶11).

He points out that these treatments also treat several animal models of T-cell mediated diseases. He also describes additional agents that do so.

For example, the immunosuppressive agent rapamycin has been determined to be effective in treating animal models of T-cell mediated autoimmune disease that include

multiple sclerosis (EAE animal model), rheumatoid arthritis (collagen induced arthritis animal model and adjuvant induced arthritis model), systemic lupus erythematosus (MRL/1pr animal model), type I diabetes (NOD mouse animal model), and autoimmune uveoretinitis (experimental autoimmune uveoretinitis animal model). (Weiner Declaration ¶13)

Also, the immunosuppressive agent FK-506 has been found effective in treating T-cell mediated autoimmune diseases that include rheumatoid arthritis (collagen induced arthritis animal model), multiple sclerosis (EAE animal model), systemic lupus erythematosus (MRL/1pr animal model), and autoimmune uveoretinitis (experimental autoimmune uveoretinitis animal model). (Weiner Declaration ¶14)

Further, the immunosuppressive agent 15-Deoxyspergualin has been found effective in treating animal models of T-cell mediated autoimmune diseases that include the following: rheumatoid arthritis (adjuvant induced arthritis animal model), multiple sclerosis (EAE animal model), type I diabetes (NOD mouse animal model), and systemic lupus erythematosus (MRL/1pr animal model). (Weiner Declaration ¶15)

Finally, results that have been obtained subsequent to the filing of this application confirm that, as with the immunosuppressive therapies described by Dr. Weiner, the invention is generally useful to treat T-cell mediated autoimmune disease. Evidence has already been submitted in this application regarding the use of oral tolerance (the mechanism to which the present invention relates) to treat autoimmune uveoretinitis, rheumatoid arthritis, and type I diabetes. Administration of autoantigens has been demonstrated as useful in treatment of the

animal model of myasthenia gravis.[1]

It is respectfully submitted that this represents a substantial showing similar to that which exists for the immunosuppressive treatments described above, and which have been shown to be generally useful in the treatment of T-cell mediated autoimmune diseases.

Dr. Weiner concludes that he disagrees that the invention is not shown to be generally applicable to treatment of T-cell mediated autoimmune disease, despite the differing etiologies of the diseases. The use of the same immunosuppressive treatment for T-cell mediated autoimmune diseases of different etiologies is common in this field. The available evidence indicates that the present invention is also generally applicable to such treatment.

For these reasons, withdrawal of the objection to the specification and rejection of remaining claims 1, 9, 11-13, 15, 18, 21-24 and 26 under 35 U.S.C. §112, first paragraph is respectfully requested.

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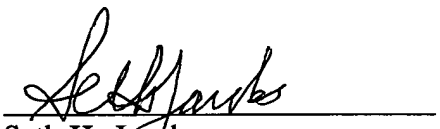
[1]Substantial evidence of this has been submitted in related application serial no. 08/454,580 (currently also being examined by the present Examiner). This evidence can be resubmitted in the present application should the Examiner find it useful.

Applicants also note that applicants' assignee has filed patent applications directed to non-obvious discoveries in the use of certain antigens for the treatment of rheumatoid arthritis, type I diabetes, and uveoretinitis.

CONCLUSION

This application is respectfully submitted to now be in condition for allowance. Issuance of a notice to that effect is respectfully requested.

Respectfully submitted,



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